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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,970	12/23/2003	Gino Tanghe	920522-95345	9404

23644 7590 06/19/2008
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EXAMINER	
HOLTON, STEVEN E	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
06/19/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent-ch@btlaw.com

Office Action Summary	Application No.	Applicant(s)	
	10/743,970	TANGHE ET AL.	
	Examiner	Art Unit	
	Steven E. Holton	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20 and 23-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20 and 23-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is made in response to applicant's amendment filed on 7/18/2007. Claims 1-20 and 23-26 are currently pending in the application. An action follows below:

Response to Arguments

2. Applicant's arguments, see pages 8 and 9, filed 7/18/2007, with respect to the rejection(s) of claim(s) 1, 4, 7, 8, 17, 22, and 24 under 35 USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a combination of previously presented prior art and newly found prior art. The Examiner agrees that the Someya et al. reference (USPN: 5396257) does refer to the use of CRT type devices which do not possess a plurality of individual emissive devices. They utilize an energizing ray that energizes individual phosphors to produce pixels on the display device. However, the phosphors are typically continuous layers with out specific individual emissive elements. Thus, the Examiner agrees with the Applicant's arguments that the Someya et al. reference lacks clear teaching that each display device (first subdivisions) comprises a plurality of emissive devices.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-10, 17-20, and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greene et al. (USPN: 6020868), hereinafter Greene, in view of Someya (USPN: 5396257).

Regarding claims 1 and 24, which are drawn to a method of operation and associated display device, Greene discloses a tiled display with flat panel displays making up the tiles (Fig. 2, col. 4, lines 48-52). Green discloses the flat panel displays are known using many different types of technologies including liquid crystal displays, plasma displays, and electroluminescent displays (col. 1, lines 17-24). Greene further discusses a method of matching the visual output of the flat panel display device using correction data stored in memory devices for application to signals to be displayed.

However, Greene does not expressly disclose a method of matching color of a tiled display including "for each of the first subdivisions, setting the emissive devices so that each of said first subdivisions is optimized with respect to a first subdivision target value for that first subdivision, and after setting the emissive devices, for the emissive display, setting the first subdivision so that said emissive display is optimized with respect to an emissive display target value for said emissive display."

Someya discloses a method of matching the output of a tiled display device in which each display device is set to optimize the display of the individual display device and then matching the corrected individual display devices to completely match the tiled display device (col. 4, lines 37-59).

At the time of invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Greene and Someya to produce a method of controlling a tiled display device for correcting the output of the display device. The tiled display device of Greene which uses a flat panel display could be done using any of the well-known types of flat panel display such as an electroluminescent display. Such an electroluminescent display devices is comprised of individual pixels and sub-pixels for emitting light to make up a displayed image. The method of tile display matching described by Someya could be applied to the electroluminescent tiled display of Greene so that first each electroluminescent display would be corrected and then multiple electroluminescent displays would be matched to each other. The motivation would be to produce a tiled display device with reduced luminance shading and color shading between the plurality of display units (Someya; col. 2, lines 39-42). Thus, it would have been obvious to combine the teachings of Greene and Someya to produce the method and device described in the claims.

Regarding claims 2 and 25, Someya does not expressly disclose dividing the tiled display into larger groupings of tiles so that each larger set of displays are matched to each other. Greene discusses the idea of sub-dividing a display into smaller groups,

measuring each group, and the matching the different groups with one another to produce a final correction measurement (col. 7, lines 17-39).

At the time of invention it would have been obvious to one of ordinary skill in the art that the correction of a smaller area and then matching the smaller area with other small areas to produce a corrected larger area could be performed with multiple layers of subdivisions. The rationale would be to scale a method of correction of multiple display elements for larger and larger groups of display elements. It would be logically obvious that a sub-division of a display could be corrected and then matched to other elements within the display to form a larger sub-area. Then larger sub-areas could be corrected and matched to other sub-areas and so on. Such a method could be performed by using the suggested steps of Greene for subdividing an individual display into smaller regions for individual correction to correct the entire display. Then, the method of Someya of taking a corrected display and matching it with other corrected displays would produce a corrected tile of multiple display devices. This method could be later extended to larger groups of display devices or to smaller sub-divided areas of pixels. Thus, it would have been obvious to one of ordinary skill in the art that the methods of matching sub-areas described by Someya and Greene could be extended to include multiple iterations of matching areas, then a sets of areas, and then matching sets of sets of areas to produce the method and device described in the claims.

Regarding claim 3, neither Someya nor Greene expressly discloses providing further subdivisions made up of second subdivisions made up of first subdivisions. However, similar to claim 2, it would have been obvious to one of ordinary skill in the art

that multiple subdivisions could be mated together, and then matched sets of subdivisions could be matched with other sets. And the matching of sets could be extended to larger and larger groupings to generate a large tiled display with matched display outputs. Thus, it would have been obvious to one of ordinary skill in the art that the method of first matching a smaller area of elements and then matching multiple smaller areas as described by Someya could be extended so that groups of matched smaller areas could be matched with other groups to produce a larger matched group of groups.

Regarding claim 4, Greene discloses the first subdivision of a tiled display is an emissive display (Fig. 2; col. 4, lines 48-52).

Regarding claims 5 and 6, as discussed with regarding claims 2 and 3, it would have been obvious that multiple corrected displays could be grouped together and corrected with each other. The group of individual displays would be a display tile. Further, correcting multiple tiles of individual displays would result in creating a corrected group of groups, or a supertile of displays.

Regarding claims 7 and 8, Someya discloses causing the display devices to be changed to a uniform level (col. 5, lines 18-37). Uniform would embody the 10%, 5%, and .8% levels of matching the displays discussed in the claims.

Regarding claims 9 and 10, Someya discloses matching display devices to a uniform level (col. 5, lines 18-37). It would be obvious larger and larger groups of display devices together as tiles and supertiles would also be matched to the uniform

level. Thus, it would have been obvious to continue to match the output of larger and larger groups of display devices to uniform levels including 10%, 5%, and 0.8%.

Regarding claim 17, Someya discloses adjusting a control parameter of the display device (col. 4, lines 37-59).

Regarding claim 18, Someya discloses using the computer device to perform all corrections for each tile and across all of the tiles. The use of an algorithm that can be used for both types of calculations would be obvious to one skilled in the art as useful programming and would be a matter of design choice based on the speed of algorithms available vs. the amount of computer processing power and memory available for the entire system.

Regarding claim 19, Someya discloses performing the calibrations periodically (col. 5, lines 38-43).

Regarding claim 20, Someya discloses matching the brightness of the display (col. 4, lines 44-59) and the color of the display (col. 6, lines 1-8).

Regarding claim 26, the Examiner notes that Someya performs the steps of the action on a computer. At the time of invention it would have been obvious to one of ordinary skill in the art that the computer program to run the method could be stored on a standard computer readable medium such as a hard-drive, CD-ROM, or other well known type of storage device.

Regarding claim 23, the Examiner takes Official Notice that it is well known in the art of computing that computer programs can be transmitted across telecommunications networks to be performed at different computer locations.

4. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greene in view of Someya as applied to claim 3 above, and further in view of Miller et al. (USPN: 7184067), hereinafter Miller.

Regarding claim 11, the combination of Greene and Someya disclose all of the limitations except, " wherein determining any or more of the first subdivision target value, second subdivision target value, the further subdivision target value and/or emissive display target value, an environmental parameter is take into account."

Miller discloses an electroluminescent display device (Fig. 3, element 28) where the operating parameters of the display device are modified by measuring an environmental parameter of the conditions outside of the display device (col. 8, lines 26-43).

At the time of invention it would have been obvious to one or ordinary skill in the art to combine the teachings of Greene, Someya, and Miller to produce a tiled display device with correction for environmental parameters. It would have been obvious to combine the tiled electroluminescent display of Greene and Someya with the ambient light measurement system described by Miller. The motivation would be to adjust the brightness of the display device based on the ambient light to improve the power consumption and lifespan of an organic electroluminescent display device (Miller, col. 10, lines 9-12). Thus, it would have been obvious to combine the teachings of Greene, Someya, and Miller to produce a method of operating a tiled display with environmental measurement as described in claim 11.

Regarding claim 12, Miller discloses measuring the temperature of a display device for modification of the output of the display device (col. 10, lines 20-22).

Regarding claim 13, Miller discloses that the temperature sensor can be inside the display device and outside the display device (col. 10, lines 20-22). A temperature sensor placed near a display device can only measure the ambient temperature surrounding the display device which is affected by the display device. Thus, by measuring the temperature outside of the display device the temperature of the display device can be estimated based on the measured ambient temperature.

Regarding claim 14, Miller discloses measuring the ambient illumination (col. 8, lines 26-43).

5. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greene in view of Someya as applied to claim 3 above, and further in view of Cok et al. (USPN: 7161566), hereinafter Cok.

Regarding claim 15, the combination of Greene and Someya disclose all of the limitations except, "wherein in determining any or more of the first subdivision target value, second subdivision target value, further subdivision target value, and/or emissive display target value, an operating parameter stored on the first subdivision or second subdivision or further subdivision is taken into account."

Cok discloses a method of adjusting and correcting the output of an electroluminescent display device based on the measurement of the age of the display device (abstract; col. 7, lines 18-26).

At the time of invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Greene, Someya, and Cok to produce a tiled display that used measurement of the aging of the display elements within a display device to change the output of the display device to a desired output. The motivation would be to correct the output of the display devices and compensate for changes of elements within the display device due to aging of the display device (col. 2, line 64 - col. 3, line 9). Thus, it would have been obvious to combine the teachings of Greene, Someya, and Cok to produce a tiled display device operated so that the target output of an individual display device would be determined based on an operating parameter stored from measurements of the display device as described claim 15.

Regarding claim 16, Cok discloses changing operating parameters of a display device based on the age of the display device (col. 7, lines 18-26).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven E. Holton whose telephone number is (571)272-7903. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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June 13, 2008\
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